Redacted

PACCAR Inc

November 9, 2017

Mr. Nate Seymour
Safety Defect Investigator
National Highway Traffic Safety Administration
Office of Defects Investigation – Med/Heavy Duty Vehicles
1200 New Jersey Avenue SE
W46-324
Washington, DC 20590

Re: RQ 17-001: Request for PACCAR Peer Data

Dear Mr. Seymour:

PACCAR Inc. is providing this response to the questions you emailed to various PACCAR personnel on October 12, 2017. You sent these questions in connection with RQ 17-001 after seeing a PACCAR axle at the Tech Center in August. As we understand it, NHTSA is currently investigating capscrew failures on certain Daimler Trucks North America LLC (DTNA) axles. Your request seeks peer data from PACCAR. PACCAR is pleased to assist NHTSA in this matter.

In this letter, we repeat verbatim each of your questions and supply our responses directly below the request. Because some of the information you have requested is confidential business information that should be withheld from disclosure under the Freedom of Information Act and NHTSA's regulations at 49 C.F.R. Part 512, we are submitting a redacted copy of this response directly to you and two confidential copies containing all of the requested information (plus an additional redacted copy) to the Office of Chief Counsel. The confidential business information is enclosed within brackets.

Request No. 1:

What is the expected torque loss / clamp load loss over time & cycles for the steer and tie rod arm bolts? Does PACCAR have any validation data that shows the amount of loss if any?

Response:

[redacted]

pamela.tonglao@paccar.com | Direct Line (425) 468-7356
P.O. Box 1518, Bellevue, WA 98009 | Telephone (425) 468-7400
PACCAR Building 777 106th Ave. N.E., Bellevue, WA 98004 | Facsimile (425) 468-8228

Redacted

Request No. 2:

Is there an expected clamp load loss due to heat cycling from the front brakes? Does PACCAR have any validation data that shows the amount of loss if any?

Response:

[redacted]

Request No. 3:

Please describe the capscrew to include size and material specifications.

Response:

M22-2.5 x 80 mm long flange bolt.
Mechanical properties per ASTM F568 Class 10.9.

Request No. 4:

Are the bolts threaded the entire length, or do they have a shoulder? Please explain why PACCAR choose the type of bolt it uses.

Response:

[redacted]

Request No. 5:

The axle at the Tech Center appeared to have bolts with washer integrated into the head. Please explain the reasoning behind this.

Redacted

Response:

[redacted]

Request No. 6:

Is Loctite used on the bolts during assembly or service?

Response:

[redacted]

Request No. 7:

Are the bolts considered one time use or may they be reused?

Response:

The bolts are one time use, a torque to yield strategy is used during installation.

Request No. 8:

What is the target torque range of the capscrews?

Response:

Min 405 lbf-ft., + 120° twist ±10%
Max 480 lbf-ft., + 120° twist ±10%

Request No. 9:

Did product validation testing include end stop to end stop conditions to determine the forces at the steering arm and tie rod arms when they hit the steering stops? If so, please describe the test parameters and results.

Response:

[redacted]

Request No. 10:

What axle ratings does PACCAR offer this design?

Response:

20,000 lbs. and 22,000 lbs.

Request No. 11:

Has PACCAR experienced any capscrew failures? What is the failure rate?

Response:

No.

* * *

We hope this information is helpful.

Very truly yours,

s/Pamela S. Tonglao

Pamela S. Tonglao
Counsel